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COUNTRY PROGRAMME FOR VIET NAM

UNDP assistance requested by the Government of Viet Nam for the period 1977-1981

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I. FINANCIAL SUMMARY

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I. BASIC DATA

A. The Geography

1. The Socialist Republic of Viet Nam has a land area of 332,000 km^2 between latitudes 8° and 23° north.

2. The country is divided into three distinct geographic areas. The plains extend through the length of the country, with the Red River delta in the north and the Mekong delta in the south being the dominant parts of the plains. The highlands consist of the mountain ranges in the northwestern parts and continue southwards to central Viet Nam. The third part is the sea coast which is more than 3,000 km. long.

B. The Climate

3. In the north, there are two seasons: winter, from November to April, with relatively low temperatures (average around 16°C) and low rainfall, and summer, from May to October, with great heat, heavy rain and typhoons.

4. In the south, the climate is of regular monsoon type, with constant high temperatures (between 25° and 30°C), distinct monsoons and a rainy season.

C. The Population

5. The population at the end of 1978 was estimated at 52 million. It is divided more or less equally between the northern and southern parts of the country. The growth rate in the north has been estimated at between 2.5 and 3 per cent per annum. The corresponding figure for the south is somewhat higher; 3 per cent or slightly more. The population density varies widely. The main river deltas are very heavily populated, especially the Red River delta. The other coastal regions have moderate population densities, whereas the highlands have a scattered population. About 10 per cent of the population is made up of ethnic minorities. More than 50 per cent of the population is below 19 years of age.

II. INTRODUCTION

6. At the Government's invitation, a UNDP mission visited Viet Nam in November 1976. During its visit, projects, covering the full amount of the IPF, were identified and reviewed with Government authorities. A second UNDP mission came to Hanoi in September 1977. As a result of this mission, a list of first-priority projects was confirmed and action initiated towards their implementation.

7. Under preparatory assistance activities several UN Agency missions were sent to Viet Nam in 1977 and 1978 to appraise and complete the formulation of the priority projects. In 1978, two additional projects were added to the priority list.

8. The UNDP office in Hanoi was opened on 30 January 1978 when the Resident Representative assumed his position. Since then, regular discussions on the content and implementation of the programme have taken place with the State Planning Committee, the Ministry for Foreign Affairs and the Aid Reception Committee who are responsible for co-ordination within the Government.

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9. Project documents, totalling $44 million in UNDP assistance, were signed between June and November 1978. By late 1979, four projects (initially estimated at about $3 million in total), which had originally been identified by the Government as being of secondary priority, were in the final stages of appraisal, as was one additional project which was introduced at a later stage.

10. The projects included in the programme are closely related to the Government's development priorities according to the five-year Development Plan 1976-1980.

III. DURATION, TIME FRAME AND AVAILABLE RESOURCES

11. The first country programme in Viet Nam coincides with the 1977-1981 IPF cycle, i.e. 1 January 1977 to 31 December 1981. The implementation of the programme began during the latter part of 1978, the preceding period being devoted to project preparation.

12. Resources available for programming amount to $49.08 million, of which $44 million represents the IPF allocated to the Socialist Republic of Viet Nam for the present IPF cycle. with $5.08 million being the unused portion of the 1972-1976 IPF.

13. The estimated distribution of expenditures is expected to be as follows:

1977	1978	1979	1980	1981	1977-1981
			(US $ millions)		
0.35	12.91	15.0	15.20	5.62	49.08

IV. THE DEVELOPMENT PERSPECTIVE

14. In 1975 several years of warfare in Viet Nam ended, and Viet Nam faced the double challenge of reconstruction and development.

15. As a result, in the northern part of the country (north of the 17th parallel), the economic infrastructure had suffered heavily. Power stations and industrial centres had been damaged. Practically all the main bridges and railway stations had been destroyed, as was the case with over 50 cities and townships. Industries had been relocated into less efficient small units away from urban centres.

16. In the southern part of the country, the effects of the war were different. Large-scale population movements caused by the war operations disrupted agricultural production and left large areas of agricultural land fallow which were rapidly invaded by the tropical vegetation. Many years of sustained effort will be needed to rehabilitate this abandoned land and restore agricultural infrastructure, such as irrigation, drainage and flood control systems, which had been destroyed or suffered damage by war operations and neglect. The light consumer industries, relying mainly on imported machinery and raw-materials, saw their output sharply reduced due to the cessation of external aid. As a result of physical destruction and population dislocations, the country entered the post-war era faced with the formidable task of reintegrating about 7 million people into its economy and providing means of livelihood to 2-3 million unemployed workers in the southern cities.

17. An economic reconstruction plan for the period 1973-1975 was adopted in 1973. The targets of this plan were largely reached. However, the economic infrastructure, in particular transport services, remained in urgent need of repair and further expansion to meet the reconstruction and development needs of the country.

18. A five-year development plan for the period 1976-1980 was adopted in December 1976.

19. The over-all political objective of the Plan is to create a socialist society which involves the transformation of small-scale production operative in the south into large-scale socialist operations. To that end, it has been decided to undertake three revolutions: (a) a revolution aimed at rationalizing and rendering more efficient the relations between the productive forces of the country; (b) an ideological and cultural revolution; and (c) a scientific and technological revolution - the last-mentioned one being the most important.

20. In practical terms, the Plan defines the following tasks as fundamental: (a) to accelerate the development of agriculture, forestry and fisheries, the major objective being to achieve self-sufficiency in food by 1980; (b) to develop industrial production, primary emphasis is placed on consumer goods industries and food industries based on domestic raw-material production for local consumption and export. Heavy industry, mainly servicing agriculture and light industry, is to be further expanded; (c) to improve the organization and management of the work force, with a view to achieving a marked increase in productivity. The means for these improvements will be the redistribution of the available labour force so it is more closely related to the availability of cultivable land and the manpower needs of industry and other productive sectors. The creation of agro-industrial complexes at the district level is also envisaged; (d) to undertake the socialist transformation in the southern part of the country and improve relations between the productive forces in the north; (e) to improve the quality and distribution of goods, introduce a better pricing system and render more efficient financial and banking services; in general, the Government attaches great importance to the provision of more consumer goods to the population (f) to rehabilitate and expand transport and communications services; (g) to increase exports of agricultural produce and light industrial products and expand trade relations; (h) to accelerate the growth of educational, health and other social services (i) to undertake an educational reform and intensify the training of cadres and skilled workers; (j) to introduce a new nation-wide economic management system covering all sectors of the economy; and (k) to intensify family planning activities in order to reduce the high population growth rate.

21. The sharp decrease of agricultural production in 1978, due to floods and insect infestations, has resulted in more emphasis being placed on agricultural projects aimed at achieving quick returns in the form of increased food production. Another area given high priority is the improvement of transport services both on land and at sea in order to facilitate the movement of people and goods from areas of surplus to areas of deficit.

22. According to the projections of the Plan, national income is to grow by 13-14 per cent per year during the period.

23. To reach the goals set by the Plan, a significant amount of external assistance will be necessary. Some sources have estimated this requirement at the equivalent of $3 billion for the three-year period 1979-1981.

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24. Present development co-operation efforts in Viet Nam focus principally on the provision of grants and long-term, low-cost credit for the financing of capital investment projects and for imports of essential materials and equipment. Such technical co-operation as is available to the country is usually an integral part of capital assistance projects and tends to be only a small part of the total external contribution. This emphasis on the provision of capital inputs, such as equipment and materials, is evident in the technical co-operation programmes of the United Nations organizations as well. Over-all, the largest part of the development co-operation effort is concentrated in the field of industry.

25. Viet Nam became a member of the Council for Mutual Economic Assistance in 1978 and receives most of its assistance from members of that organization.

V. DEVELOPMENT OBJECTIVES AND UNDP ASSISTANCE

26. The priorities which form the basis for the co-operation requested from UNDP correspond to some of the highest priorities of Viet Nam's development programme. The strategy employed in the country programme is the concentration of resources on a relatively small number of large-scale projects in a limited number of sectors, which could not be adequately covered by the Government's own efforts, and by co-operation with friendly countries. Thus, special attention has been given to the strengthening of agricultural research, water resources development, and research and survey support for physical reconstruction. The orientation is a pragmatic one: to obtain maximum results in the shortest time in the selected areas, responding to the immediate and enormous needs of reconstruction of a war-torn country, as is the general principle of the present five-year plan. At the same time, the country programme will provide the basis for a significant medium to long-term development effort.

V . FIRST COUNTRY PROGRAMME BY SECTOR

A. Agriculture, Forestry and Fisheries

27. Agriculture is by far the most important economic sector in Viet Nam. It is estimated that more than 70 per cent of the total population earns its income from agriculture, which contributes about 40 per cent to the national income. It is the main source of raw materials for the processing industries, and a major contributor to exports.

28. There has been serious damage to the agricultural sector through the destruction and neglect of irrigation and drainage infrastructure, the loss of draft animals, the loss of equipment, the defoliation of vast areas of forest, and, above all, population shifts and abandonment of agricultural land.

29. Adverse climatic conditions and insect damage in 1978 significantly reduced agricultural production. The grain deficit for that year has been estimated at the equivalent of more than 3 million tons of paddy. For 1979, the deficit is expected to be the equivalent of about 2.4 million tons of milled rice, based on a level of consumption of 15 kilos of rice per person per month.

30. Consequently, the Government attaches the highest priority to increasing agricultural production through expansion of the cultivated area, and improvement of existing and construction of new rice processing and storage facilities.

In 1979, 40 per cent of the 10.5 billion Dongs* has been set aside in the national budget for agricultural development.

31. The Government has launched an extensive land development programme to expand the cultivated area from 5.5 million hectares to 11 million hectares by 1985-1990. One important component of the land development programme is the creation of "new economic zones," with the purpose of clearing new land for agriculture, thus increasing food production and transferring people from the over-populated river deltas to new settlement areas. The target for the period of the Plan (1976-1980) is to resettle 1.3 million persons and clear 700,000 ha of land in these "new economic zones."

32. About 100 new irrigation projects have been planned, and a large number of these projects are already under way. Due to the irregular and unpredictable climatic conditions, water management is considered by the Government to be the cornerstone of its drive for crop-multiplication and increased productivity.

33. In order to increase agricultural output, high-yielding varieties of rice were introduced in 1968 in the north and the south, and in 1979 amounted to about 40 per cent of the planted area in the north, and to about 30 per cent in the south. Rice is the most important crop, currently grown on about 5.3 million ha, of which about 4.0 million ha are cropped during the rainy season, and 1.3 million during the dry season. The total area under rice cultivation represents about 75 per cent of total cultivated land. Futhermore, the Government is providing increasing amounts of seeds, fertilizers, insecticides and pesticides at low prices to the farmers. The manufacturing industry will be more closely geared to provide tools and agricultural machinery in order to accelerate mechanization in agriculture. The agricultural pricing system is being modified to provide more incentive. A crop diversification programme is being implemented to expand the production of crops other than rice, such as sugar, peanuts, soybeans, coffee, tea, rubber, cotton, jute, fruits and vegetables.

34. In the forestry sector the reforestation of large areas of forest land, covering a total area of about 20 million ha is required. A significant reason for the degradation of the forests has been and still is a rapid growth of the population. An increased supply of wood to industries manufacturing building materials, paper and other products now being imported is urgently needed. However, before existing problems can be resolved much preparatory work must be done in the selection of species to be planted and methods of planting, soil protection and forest management practices. Furthermore, little is known of existing forests in the absence of a comprehensive forest inventory.

35. After rice, fish is the most important staple food in Viet Nam and the estimated annual catch of 800,000 tons makes a substantial contribution to the country's economy and the animal protein supply. Ocean fishing is carried out by about 250,000 fishermen. The total catch of ocean fish amounted to about 620,000 tons in 1976. The greater potential is in the southern regions. About 100,000 fishermen and fish farmers are engaged in inland fisheries with an approximate production of 170,000 tons per year. Fish farming is widely practised, with an average yield of 2-3 tons per ha per annum.

36. The primary objective of the fisheries development programme is to add to the country's food supplies. The coast of Viet Nam is more than 3,000 km long and possesses a very great potential for increased production of fish and shrimp. The

* one US dollar = 3.29 Dongs

Government attaches great importance to fish and shrimp farming as an integral part of agriculture. Furthermore, it is anxious to accelerate the introduction of modern technology to increase catches and develop artificial culture techniques.

37. Some of the main physical targets directly related to agriculture, forestry and fisheries are listed below:

- 21 million tons of grain in 1980 as against 14 million tons in 1976;
- 1 million ha of new agricultural land for the Plan period;
- 3.5 million m^3 of timber harvested in 1980 as against 1.6 million m^3 in 1976;
- 1.2 million ha of reforested land for the Plan period;
- 1.3 million tons of chemical fertilizers produced in 1980 as against 460,000 tons in 1975;
- 1 million tons of ocean fish caught in 1980 as against 620,000 tons in 1976.

National Institute for Agricultural Sciences (VIE/76/002)

38. As indicated above, the highest priority has been attached to the rehabilitation and development of agriculture as a means of reducing and eventually eliminating, the food deficit, increasing employment and stimulating exports. Substantial increases in agricultural and animal production have been foreseen in the current five-year plan, such as:

- Increase in staple food production from 13 to 21 million tons per annum.
- Increase in meat production (chiefly through an increase in the number of pigs from 10 to 16 million);
- Expansion of cultivated land area from 5 to 6 million ha; and
- Reforestation and watershed management of 1.2 million ha.

39. The Government hopes to secure higher productivity by strengthening the scientific and technical base of the country's agriculture, and modernizing agricultural and animal husbandry techniques.

40. The principle vehicle for the introduction of technical innovation in the agricultural sector will be the National Institute of Agricultural Science. The Institute was founded in 1965 and has recently been assigned the role of leader/ co-ordinator and supervisor of all research programmes executed in Viet Nam in the field of agricultural and animal sciences. It has under its direct authority a number of specialized institutes, such as the Soil and Fertilizer Institute (see page 7) and the Cotton Development Institute (see page 8), both of which receive UNDP assistance. This organization of the research work in the agricultural and animal sectors facilitates close functional linkages between the three UNDP - assisted projects. The National Institute of Agricultural Science, in its capacity as the central institution in agricultural and animal research, is the main vehicle for close co-operation between the specialized institutes and external co-operation in general. Its central position is to stimulate a coherent and well co-ordinated approach to agricultural and animal research in the country.

41. The Institute is still in its formative stage and the Government intends to develop it together with its regional and specialized facilities. Although competently staffed, the Institute lacks the basic equipment needed for its research activities, as well as access to the advanced technologies developed in the recent years, and UNDP has been asked to help remedy this situation. The research programmes on food grains, legumes, fodder crops, animal health and production to be pursued by the

Institute constitute an essential link in the Government's strategy for self-sufficiency in food production. The use of the modern equipment in close association with highly specialized consultants and the study tours and fellowship study programmes to be implemented for the Institute research staff are expected to make a significant contribution towards familiarizing the national researchers with new technologies in food production, thus laying a solid foundation for the Institute's result-oriented research activities in the future.

42. Due attention will be paid to establishing strong links with the agricultural extension services to ensure that the results of research are regularly transmitted to the farmers.

43. The Institute includes the following subject areas (departments): (a) agricultural botany and agronomy; (b) plant genetics and breeding; (c) crop ecology and agro-meteorology; (d) plant protection (entomology, pathology and weed control); (e) micro-biology; (f) crop physiology; (g) biochemistry and food processing; (h) chemistry; (i) water management; (j) veterinary science; (k) animal genetics and breeding; and (l) physiology and animal production.

44. Equipment, specialized expertise and training facilities worth a total of $6.5 million have been requested from UNDP. The Government contribution is estimated at Dongs 27 million and the project duration will be five years. The project was approved in June 1978.

Institute of Soils and Fertilizers (VIE/76/008)

45. Of the total area of Viet Nam (33 million ha) approximately 6 million ha are at present cultivated to feed a population of 52 million.

46. As stated above, the Government is attempting in its five-year plan to develop an additional 1 million ha of land for agricultural production, mainly for rice cultivation. In order to achieve this objective, precise information on the characteristics and agricultural potential of the soils, the irrigation requirements and the kinds and amounts of fertilizers needed is indispensable.

47. Although some pedological studies have been carried out in the past years, no land evaluation has been done and no unified soil map using a homogeneous classification system is available, nor have definite conclusions been reached as to the optimum qualitative and quantitative needs for artificial fertilizer and organic manure for the different soils and crops.

48. The principal body responsible for the necessary investigations and research in this field is the Institute for Soils and Fertilizer Research in Hanoi, which, due especially to the lack of modern laboratory equipment and supplies, is unable to fulfill this role satisfactorily. The institute is an organizational part of the National Institute for Agricultural Science, which is also receiving UNDP assistance, and will be housed in the same complex.

49. UNDP has been requested to contribute towards achieving the following objectives: (a) to establish a fully operational Institute of Soils and Fertilizer Research in its various disciplines; (b) to provide the Ministry of Agriculture with relevant information on the main kinds of soil in the country for the optimum production of major food crops;

(c) to establish a system of agro-chemical services throughout Viet Nam, including regional, provincial and district experimental stations. The services will be responsible for all soil testing programmes and will ultimately recommend to co-operatives and farmers methods of fertilizer application; and (d) to elaborate soil and land evaluation maps in accordance with the FAO Soil Map of the World legend and the FAO framework for land evaluation.

50. The UNDP contribution will consist of modern laboratory equipment and supplies, expertise, and training facilities for Institute staff in modern techniques of soil survey and land evaluation. The project will elaborate a programme of work for the immediate and long-term covering the collection of data, the formulation of research programmes, the elaboration of appropriate field techniques and the extension of research results to the field level. Finally, the project will define the principal agro-ecological zones of the country. Close co-ordination will be maintained with assistance provided by the Belgian Government in the same field. The estimated value of the UNDP contribution is $2,266,040 over a period of five years. The Government counterpart contribution is expected to be Dongs 3,887,000. The project was approved in June 1978.

Cotton Development (VIE/76/009)

51. The present consumption of cotton products in Viet Nam is estimated at 30,000 tons per year, corresponding to 35,000 tons of raw cotton, while the real need of the population could amount to 50,000 tons. All raw material used by the cotton industry is presently imported from abroad, amounting to a value of $52 million yearly.

52. Trials have been made in earlier years to plant cotton in several parts of the country. It was found that while the climatic and physical conditions in the north were not suitable for cotton growing, certain areas in the south produced positive results in 1960/61 and 1973/75. Particularly in Thuan Hai province, the climate and the soils have been found favourable for cotton growing. The Government therefore decided that cotton growing efforts should be concentrated in this region. Production has so far been modest, due to problems with insect pests and the inexperience of the local population.

53. There is an urgent need for intensive applied research to improve the present cotton growing techniques and to achieve the objectives of the national development plan for cotton production. A central Cotton Research Station has recently been created for this purpose at Nha Ho in Thuan Hai province. The station includes 512 ha to carry out applied research, the production of appropriate seeds and the training of researchers, technicians and cadres. The station is a part of the National Institute for Agricultural Science which is also receiving UNDP assistance.

54. UNDP has been asked to co-operate in the strengthening of the research station by: (a) supplying the station with the basic laboratory and field (land-levelling) equipment necessary to determine the most appropriate soils for cotton growing, as well as the most effective cotton seeds, and to develop techniques for fighting insect pests and treating and irrigating the land to be utilized for cotton growing; and (b) familiarizing researchers, technicians and cadres with research carried out and techniques applied in other cotton growing countries in Africa and Europe through training abroad and in-country by foreign experts.

55. The UNDP contribution is estimated at $1 million over a period of four years. The approved Government counterpart contribution is Dongs 1,926,740. The project was approved in June 1978.

Use of Remote Sensing Data for Assessing Agricultural Resources (VIE/76/011)

56. The Government's prime objective of self-sufficiency in food production requires the systematic development of the country's agricultural resources. To support this undertaking, a "national integrated resource information system" has been envisaged to make available to national and regional authorities knowledge of the type, quality, distribution and accessibility of natural resources, and land-use patterns. This is expected to provide a realistic data-base for national planning.

57. Data provided by earth satellites have proven to be an effective aid in resources identification and monitoring of a variety of renewable and non-renewable resources, and the Government wishes to build up a facility for the practical application of remote sensing technology.

58. In 1977, a space research centre was established in the National Centre for Scientific Research, which has been operating on a limited scale and with a minimum of equipment for the collection, storage, retrieval, analysis and distribution of remote sensing data in the over-all framework of agricultural and natural lands. For this work, the Centre has been receiving some assistance from ESCAP, but much more is needed in the form of equipment and training to make it into a viable institution.

59. UNDP has therefore been requested to provide equipment to complement the available interpretation equipment, and accessory hardware and software for utilisation with existing computers, as well as international expertise in remote sensing technology together with foreign training facilities in appropriate aspects of agricultural land use, water resources, forestry, geomorphology/geology, soils, meteorology, instrumentation and digital analysis techniques.

60. The project will require UNDP assistance worth $560,000 over a period of one-and-one-half years. The Government counterpart contribution is estimated at Dongs 1,076,000. Approval of the project is expected early in 1980.

Plant Protection Service (VIE/79/001)

61. Climatic conditions in Viet Nam are very conducive to a great variety of pests which regularly attack the main crops (especially rice) and cause heavy losses, especially in the southern part of the country. No definite figures are available, but as much as 30-50 per cent of the rice crop may be affected by pests, diseases and weeds.

62. To effectively remedy this situation, plant protection services throughout the country need to by upgraded with the introduction of modern concepts and techniques of plant protection. An integrated pest control programme is to be developed which will include the strengthening of central and regional plant protection centres, laboratories and field activities, and forecasting, monitoring and practical research capabilities. For this purpose, UNDP has been asked to provide equipment and supplies, experts' services and training facilities for a total amount of $1 million during this programming period. The project was approved in November 1979.

Shrimp Culture and Production (VIE/76/007)

63. Because of its tropical climate and geographical features, the coast of Viet Nam, extending for about 3,000 km, is highly suited for aquaculture food production, in particular the large fertile river deltas and the numerous sheltered bays in the central parts of the coast.

64. Presently, fish and shrimp farming generally give very low yields. The Government is striving to accelerate the introduction of modern technology to improve yields from shrimp culture operations and to develop artificial culture techniques. This is considered to be an important and urgent task, aimed at adding to the country's presently deficient food supplies and earning foreign exchange. The development of shrimp culture, being a labour-intensive activity, will also serve to alleviate unemployment in the coastal areas.

65. UNDP has been requested to help the Institute for Shrimp Culture at Haiphong to increase its research capability in both experimental and applied fields, bringing it to the level of technical centre for shrimp culture and production in the whole country. No other external assistance is available in the field covered by this project.

66. UNDP assistance will include a number of consultancy missions in: (a) the demonstration and use of UNDP-financed laboratory, feed processing, and shrimp culture and production equipment; (b) the planning of coastal surveys on shrimp fry and spawners to be carried out by research vessels provided by UNDP; (c) the planning and development of food studies to determine the product-mix best suited for shrimp larvae using local raw materials; (d) the development of pond management practices; and, (e) the training of local counterparts in the required disciplines by means of study tours abroad, and local fishermen in the use of the survey equipment for local vessels and shrimpers provided by UNDP.

67. The UNDP contribution in the form of consultants, study tours, equipment and research vessels is estimated at $1,773,416 over a period of three years. The Government counterpart contribution is estimated at Dongs 15,116,010. The project was approved in June 1978.

Forest Inventory, Planning and Research

68. The Government of Viet Nam has shifted the emphasis on development from the urban-industrial zones to the rural areas. As a result, considerable demand is now being made on the forestry sector to improve its capability to provide employment for rural populations as well as to meet the country's requirements for industrial cellulose and other forest products.

69. The ability of the sector to respond to the needs defined in the current five-year plan is severely limited by the generally run-down condition of the forests and forest industries. In particular, forest ecosystems have been impoverished by shifting cultivation and uncontrolled exploitation over a long period of time. Furthermore, the technology necessary for the establishment and management of man-made forests is not well developed, and the necessary resources are not available. Finally, because of the war situtaion, the forestry profession has not been able to maintain contact with the profession in other tropical and sub-tropical countries, and is therefore deprived of information on recent technical innovations in tropical forestry.

70. A crash programme of applied forestry research integrated with the requirements of the current and future five-year development plans both for forestry and agriculture is now part of the Government's plan for the development of rural areas.

71. The rehabilitation of the areas by reforestation using a variety of tree species, and where possible and desirable, agro-forestry techniques, would reduce shifting cultivation and allow the development of irrigated agriculture. Both food and timber supplies would be increased, and secondary industries could be developed.

72. The success of such reforestation will depend primarily on the availability of information on soils, tree species suitable for particular soils and climatic conditions, appropriate nursery and plantation technology, and methods of tending and protecting established plantations. A nation-wide forest reconnaissance survey, which could serve as a basis for action programmes in land development, forestry and related fields is urgently needed. Such a general survey is to be carried out before starting an intensive inventory programme of commercial forests with a view to their management. The task of afforestation, together with the subsequent production and management, requires a strong, informed and well-equipped cadre of practising officers, technicians and workers. To support and further develop technical capabilities of this cadre, it is necessary to have an equally strong research organization.

73. Three projects have been designed to assist the Ministry of Forestry in these tasks through the strengthening of three research institutes. All three projects were approved in October 1978.

74. The research activities of these institutes are supported by 19 experimental research stations throughout the country, which are presently not able to fulfill their respective roles due to a shortage of suitable equipment, the age and precarious nature of the installations, the lack of experience in the use of modern techniques, and limited facilities for information and documentation.

The Forest Inventory and Planning Institute (VIE/76/014)

75. This Institute, located in Hanoi, with photo-interpretation facilities and cartographic laboratories, was established to carry out forest resource inventories on a national scale. UNDP has been requested to provide: (a) standard and special equipment for cartography, data processing and inventory facilities for the field inventory units and the Institute's headquarters; (b) technical advice on methodology, organization and implementation of inventories and reconnaissance surveys on a national scale; and,(c) training abroad and in-country through consultancies, study tours and fellowship programmes.

76. The total UNDP contribution is to be $1,943,000 over a period of three years with a Government counterpart contribution of Dongs 1,957,000.

The Forest Research Institute of Viet Nam (VIE/76/105)

77. This Institute was established in 1961, close to Hanoi, and is responsible for conducting applied and basic research related to the inventory, development and utilization of the existing forests of Viet Nam. Its areas of responsibility include natural regeneration, enrichment planting, agro-forestry techniques and problems of establishment and management of large-scale industrial plantations of indigenous and exotic species, research on all forest products which can be of value to the country for various purposes, forest entomology and pathology, fire control and elaboration of methodologies for forest protection.

78. The Institute requires assistance to conduct applied research in the following fields: (a) site classification in areas allocated for plantation establishment;

(b) tree improvement and forest genetics, seed supply, genealogical studies of native and exotic species of value for both industrial and community forestry, and tree physiology; (c) nursery and plantation technology including agro-forestry techniques; (d) inventory and management of forest ecosystems; and (e) forest protection.

79. UNDP is requested to provide laboratory and field research equipment, consultant services and group training facilities to an amount of $2,140,000 over a period of three years. The Government counterpart contribution is estimated at Dongs 4,574,660.

The Southern Branch of the Forest Research Institute of Viet Nam (VIE/76/016)

80. Located in Ho Chi Minh City, this Institution is especially in charge of research on problems of natural regeneration and natural forests, afforestation of denuded hills, wood technology, forest products, and mechanization, with a particular interest in teak plantations. It requires assistance towards research work in the following fields: (a) soils inventory for the selection of optimal sites for teak and other species; (b) trials for selection of the tree varieties yielding the required products; (c) studies of wood quality of teak found in Viet Nam to determine its suitability as an export product; (d) studies of pests and diseases in nurseries and plantations in order to devise control methods; (e) research for the improvement of management techniques in nurseries and plantations, including soil protection; and (f) establishment of a seed distribution centre with facilities for handling, testing, storing and registration of seeds.

81. UNDP has been requested to provide equipment, consultant services and training facilities worth a total of $1,456,000 over a period of three years. The Government contribution is expected to be Dongs 2,508,000.

B. Water Resources

82. The rational utilization of water resources is one of the highest priorities in Viet Nam's development effort. Abundant water resources are available to the country on the surface as well as underground, which are fed by a large number of rivers, particularly in the Mekong and Red River deltas and by more or less heavy rainfall at various parts of the country. In the delta areas large numbers of small lakes are scattered between the rivers. In the mountain areas the many small rivers can be used to create artificial lakes through construction of dams, the geomorphological structure of the valleys being favourable for this purpose.

83. Generally speaking, water tends to be available in excess quantities at certain times of the year, with shortages in other periods. In some areas in the Red River delta, a system of dykes has been constructed to protect villages against flooding of the many rivers. This has had as a side-effect the diminished availability of water for agriculture (and of new alluvial soil which regularly covered the fields, but is now carried off to the sea).

84. The principal problem is the control and accessibility of the total available water resource and its optimal utilization for the development of the country, in order to: (a) enable, through irrigation, achievement of a second harvest of rice and other cereals throughout the country, and an increase in production of all other crops; (b) provide clean water for domestic use by a growing urban and rural population and to satisfy the increasing requirements of industry; (c) control and regulation of rivers to prevent catastrophic floods which regularly occur in the most fertile regions;

(d) enable utilisation of water and soil in the areas bordering the sea which are threatened by salinisation; and, (e) satisfy the increasing requirements for energy through the production of hydro-electric power.

85. In order to reach these objectives, a sizeable number of hydraulic works needs to be designed and constructed and an over-all assessment of the availability of water throughout the country needs to be made to enable the Government to formulate and pursue an over-all water utilization programme.

Feasibility Studies for Four Dams (VIE/76/003)

86. One of the ways to increase production of food is to control excess water during the rainy season and to supplement insufficient water supply during the dry season. It has been estimated that with better irrigation double cropping of rice will be possible in an additional 1 million ha in the north and 2 million ha in the south. The construction of a number of small and medium-size dams has therefore been planned, which will also help to satisfy important requirements for energy.

87. In this context, UNDP has been requested to co-operate in preparing feasibility studies for the following four storage dams for hydropower, irrigation and flood control: (a) the Song Chu Dam on the Chu River, west of Thanh Hoa in the province of the same name. This dam will have an estimated water storage capacity of 1,330,000 m^3, an installed electricity generation capacity of 142 MW and an irrigation potential of 56,000 ha. It will also control floods caused by the Chu River in the Thanh Hoa plain; (b) the Song Bo Dam on the Con River, west of Da Nang, in the province of Quang Nam-Da Nang, with an irrigation potential of 32,000 ha (c) the An Khe Dam, on the River Ba, west of Qui Nhon near the city of An Khe in the provinces of Gia Lai-Cong Tum which will have an estimated storage capacity of 448 million m^3 and an estimated installed electricity capacity of 65 MW with the potential of irrigating an area of 32,000 ha.; and (d) the La Nga Dam on the river of the same name is located between Ho Chi Minh City and Dalat and will benefit the provinces of Dong Nai and Thuan Hai. This dam willhave an estimated storage capacity of 320 million m^3, an installed capacity of 100 MW and will irrigate an area of approximately 50,000 ha.

88. To help prepare the feasibility studies for these structures, UNDP was requested to provide equipment for geophysical, geodesic and topographic surveys, photogrammetry, and drilling operations, together with specialists to assist with the installation and initial operation of the equipment and fellowships and study tours for Vietnamese personnel. In the latter half of the project this will be supplemented by expertise to draw up specifications and documents suitable for presentation to possible financing sources.

89. The total UNDP contribution to the project is estimated at $5,044,000 over a period of three years, combined with a Government contribution of Dongs $3,393,000. The project was approved in June 1978.

Groundwater Investigations (VIE/76/004)

90. Viet Nam has abundant quantities of groundwater, which, to a large extent, are not yet systematically explored, and therefore are underutilized. Especially in the alluvial and sedimentary deposits, good quality water is available at shallow and medium depths, with brackish and saline water near the coast; in basalt regions mineral and hot waters are found.

/...

91. The exploitation of these resources is of the greatest importance for the development of the country, be it for irrigation or industrial use, for domestic consumption in the urban and rural areas, or for therapeutic use in the case of thermal and mineral waters.

92. The Government has therefore set the following objectives for exploitation during the period 1980-1990: (a) 750,000 m^3 per day for domestic use in the urban and rural areas and for use by industry, including agro-industries; (b) 500,000 m^3 per day for irrigation; and, (c) 24,000 m^3 per day for thermal and mineral waters.

93. To achieve these objectives, the General Department of Geology will carry out an over-all hydrogeological survey in the country to make a systematic estimate of the total groundwater potential on the basis of which exploitation can be planned.

94. UNDP has been asked to co-operate in this undertaking through the provision of equipment, expertise and study tours. The Geology Department has a considerable number of trained personnel and the accent is therefore on equipment for drilling, geophysical prospecting, topographical mapping, and laboratory analysis.

95. The total UNDP contribution amounts to slightly over $4,181,000 over a period of three years, with a Government contribution of Dongs 26 million. The project was approved in June 1978.

C. Construction

96. Immediate priority for Viet Nam is the physical reconstruction of the country in the post-war period. For this purpose, the current five-year plan envisages 14 million square metres of building construction, including extensive rebuilding as well as the development of towns, villages, residential areas, hospitals, schools, and industrial centres, in order to restore approximately 4.2 million sqaure metres of buildings destroyed or damaged, alleviate the acute shortage of housing in urban centres in the north and resettle large numbers of displaced and unemployed persons in the rural areas of the south. For these purposes the following tasks have been planned:

- Increase the material and technical base of the construction branch to transform it gradually into a modern industry; in the immediate future, to adequately equip construction workers with appropriate tools; mechanise heavy construction works; apply advanced methods of construction; closely control economical/technical building norms and quotas to ensure the quality of projects; raise labour productivity; and reduce the costs of projects;

- Develop the building materials industry through the building of major installations with modern techniques; broaden the range of building materials and increase their quantity and quality to cover all construction needs; increase especially the production of cement, bricks and tiles and other basic materials as well as decorative materials, sound-proof, moisture-proof and heat-insulation materials;

- Develop construction planning, survey and designing capacity of the country; adapt to local conditions, as feasible, innovations made in other countries in the field of planning and designing; mobilize the creative talents of all those involved in the construction industry at all levels; and develop architecture with a modern and national character;

- Strengthen the Ministry of Construction to make it the centre of the whole construction branch, while developing the construction potential of the localities, including the building teams in the co-operatives and the capacity for maintenance and repair of domestic dwellings. Develop participation in construction work by public institutions and private enterprises in the south.

Surveys and Investigation for Construction Sites (VIE/76/105)

97. As the first and most important stage in this programme of reconstruction, surveys and investigations of building sites must be carried out in order to prepare maps for physical planning; soil conditions must be determined for the designing of building foundations, which poses serious problems in most of the country; quantities and qualities of groundwater must be established in areas where waterworks installations will be established to meet the needs for drinking water in towns and other residential areas and for industrial purposes. Surveys and investigations must also be carried out for raw materials (rock, sand, gravel, clay, etc.) used in building construction and in the production of building materials in order to provide quantitative and qualitative data for the designing of extraction and production plants to meet the needs for building materials in particular localities and for their appropriate use in construction.

98. The Survey Company of the Ministry of Construction has been assigned the task of carrying out the extensive surveys and investigations of building sites and raw materials. The current capacity of the Survey Company, however, is severely limited by an acute shortage of equipment. Much of the equipment originally available has been destroyed. What was left is obsolete and worn out, and UNDP has been requested to provide essential modern equipment and facilities to train Vietnamese personnel in its use and application. The equipment requested from UNDP only represents part of the requirements of the programme and will be used for priority work. Efforts will be made to supplement this with equipment provided from other sources.

99. The equipment requested covers four major categories, namely: drilling operations; surveying and mapping; laboratory work; and geophysical activities. Together, it will serve to equip three regional and six local or provincial teams to cover priority areas throughout the country.

100. The company consists of a considerable number of trained personnel in the various categories. However, they require in-service and foreign training in the operation and application of equipment and in the development of methodologies, standards and guidelines for carrying out the programme of surveys, investigations and tests (analysis and interpretation of data and results, preparations of technical reports and maps and training of instructors, engineers and inspectors). UNDP is requested to provide expertise for in-service training, and facilities for training in other countries. This will be part of an intensive programme of specialists' services which will accompany the provision and initial operation of the equipment and the realisation of the programme.

101. The project will cover a period of five years and include a UNDP contribution worth $14,001,940. The Government contribution is estimated at Dongs 52,380,000. The project was approved in June 1978.

D. Industrial Development

102. Viet Nam's industry has suffered heavy damage and the rate of industrial growth therefore has slowed down considerably.

103. The most immediate concern of the Government in 1975 was to reconstruct industrial units and to reassemble into larger production units those industries in the north which had been divided into small units.

104. The over-all development objective for the industrial sector, according to the development plan 1976-1980, is to reach a higher degree of self-sufficiency in intermediate and consumer goods and to increase exports of manufactured products.

105. Heavy industry will continue to be concentrated in the northern part of the country. It will be expanded to accelerate the exploration of raw materials, to produce intermediate products needed by the light consumer goods industry and to service agriculture by providing it with tools and machinery. Immediate emphasis will be on the engineering industry. Other priority areas are electronics, metallurgy and chemical industry, as well as large-scale hydro-electric and coal production.

106. In the south, the light consumer goods industry will be rehabilitated and expanded. Particular attention will be given to industries based on domestic raw materials geared to the production of essential consumer goods for local consumption and export as well as to industries producing spare parts for agricultural and industrial machinery. Handicrafts and small industries are also considered important.

107. In general, the Government plans to promote the development of regional industries with a high degree of autonomy. Efforts are also under way to improve management practices with stronger emphasis on efficiency and cost consciousness rather than on physical production targets.

108. A new investment code was introduced in 1977. This code allows for foreign participation in industrial and other enterprises of between 30 and 40 per cent. The code further offers protection against nationalization, the right to repatriate a part of the net profits and, in the case of high priority enterprises, exemption or reduction of income tax and import and export duties.

Feasibility Study for the Establishment of an Oil Refinery and Petrochemical Complex (VIE/76/006)

109. Energy requirements in Viet Nam are increasing and can be expected to do so even more rapidly with increased industrial activity. Coal is an important local source of energy, but the major over-all source for the present and future is petroleum. Prospects for locating considerable quantities of commercially exploitable reserves in the country (mainly off-shore, in the south) are encouraging and exploration for petroleum and natural gas started some time ago. The potential exists for self-sufficiency in petroleum products, petrochemicals and fertilizers, and to reach this objective the Government plans to construct a refinery, petrochemical and fertilizer complex in Thanh Hoa province.

110. The current plan calls for a pre-investment and techno-economic study for this complex which will also require the development of the necessary infrastructure in the industrial area such as harbour facilities, electric power supply, pipelines, roads and railway connections as well as a township with social and physical facilities.

111. UNDP has been requested to provide for a techno-economic study to be carried out for this entire complex. The study will in the first instance focus on pre-investment requirements identifying the most suitable alternatives with respect to the manufacturing scheme, location of the complex, and infrastructural requirements to enable the Government to make the decisions necessary for undertaking final feasibility anddesign studies which will form the second stage of the project, and to enable it to initiate investment in infrastructural development relating to the complex. The techno-economic study will form the final report of the project and will investigate demand patterns, provide advice on financing possibilities and make an assessment of all aspects of capital investment requirement, production costs, profitability and organization of project implementation through all its phases.

112. The project, which will be under the aegis of the Viet Nam Oil and Gas Department (Petrovietnam), will cover a period of approximately one year and will require UNDP financing of approximately $400,000 for consultancy and training services. The Government's counterpart contribution will amount to Dongs 410,000. The project was approved in August 1978.

Institute for Tropicalization Studies (VIE/76/010)

113. Viet Nam imports large quantities of equipment and machinery which are required for the industrialization of the country.

114. Experience has shown that much of this equipment does not perform at optimum efficiency. An important cause for this lies in the climatic conditions which have a heavy wear-and-tear effect on many materials. The equipment, therefore, needs to be protected and adapted to local conditions of heat, cold, heavy humidity and sudden temperature changes which characterize the climate in Viet Nam to varying degrees.

115. To this purpose, the Government has set up, within the National Centre for Scientific Research, an Institute for Tropicalization Studies which will comprise laboratories for electrochemistry and corrosion, research on polymeric materials, artificial climate studies, radiation chemistry, studies of electrical and electronic equipment, fungus and molds, and a pilot workshop for research on manufacturing processes and for small-quantity production of anti-corrosion materials.

116. The equipment presently available at the Institute is totally inadequate for these activities, and UNDP has been requested to enhance it with instruments for the various laboratories, supplemented by consultants and training facilities to enable staff of the Institute to utilize this modern equipment to the maximum extent in practically-oriented research programmes. The results and findings of this Institute may be of interest to other countries in Asia and Africa with hot and humid climates.

117. The cost of UNDP's share of the project has been tentatively set at $914,000. The Government contribution has not yet been determined. The project is expected to be approved early in 1980.

Standardization and Quality Control (VIE/76/013)

118. The Government considers the introduction and application of standardization, metrology and quality control techniques an important prerequisite for balanced industrial development and for successful competition of Vietnamese products on international markets.

119. In order to achieve this objective, the Government wishes to improve the operational status of the Institute for Standardization located in Ho Chi Minh City. This Institute undertakes studies, experiments and tests in standardization, metrology and quality control related to industrial products with special emphasis on those which are destined for export.

120. At present, the Institute is heavily underequipped for this purpose and UNDP has been requested to co-operate in providing it with modern equipment, expertise and training to assist in the national harmonization of different standardization, metrology and quality control systems, and in the adjustment of these systems to international standards. Two laboratories (for textiles and rubber) have already been established, with basic equipment. UNDP assistance will be used to complete them and to equip a number of new laboratories.

121. The cost of UNDP's participation in this project has been tentatively set at $910,000. The Government contribution has not yet been determined. The project was approved in late 1979.

E. Transport and Communication

122. The transport system was heavily damaged, in particular the roads, bridges, railyards, railway stations and ports. As was the case with all other economic sectors, the most urgent task facing the Government was to repair and restore what had been damaged or destroyed.

123. According to the development plan, attention in the transport sector is focused on railroads, inland waterways and coastal shipping.

124. The shape of the country makes the north-south connexion a major undertaking. The Hanoi-Ho Chi Minh City railway link and coastal shipping will continue to carry the bulk of the north-south traffic.

125. An extensive network of navigable rivers and canals offers good opportunities for the transportation of people and goods at relatively low cost. The country already possesses a number of good sea ports. However, some of these ports need to be reconstructed and expanded. This is particularly true of Haiphong harbour which is heavily congested since it handles the major part of the shipping in the northern part of the country. The five-year plan aims at mechanizing river transport and constructing mechanized river ports.

126. The road network in the north consists of well developed secondary roads serving rural areas. In the south, rural roads have been neglected. The development of the road network will, in the future, be concentrated on secondary rural roads. This is of particular importance, considering the Government's plans to establish "new economic zones" to be located in remote areas.

127. In the field of civil aviation, the objective is to develop and strengthen the civil aviation infrastructure to permit the safe operation of large and medium-sized commercial aircraft, mainly in and out of Hanoi.

Feasibility Study for the Expansion of Di An Railway Workshop (VIE/78/001)

128. Within the overall high priority accorded to the improvement of the transport

system within the 1976-1980 plan, development of the railways is a particularly urgent one. The heavy damage caused by the war needs to be repaired and additional transport requirements resulting from the unification of North and South need to be satisfied.

129. One of the first tasks in meeting this objective is the reconstruction of the principal railway lines and the supporting workshops for maintenance and repair of locomotives and rolling stock, as well as the repair and building of wagons and coaches and the fabrication of parts.

130. One of the principal facilities available in the country for this purpose is the railway workshop at Di An (Ho Chi Minh City), and UNDP has been requested to co-operate with the railway authorities in carrying out a study and preparing plans for the reconstitution and expansion of the facilities available there.

131. For this purpose, a pre-investment study is to be carried out in the first instance which will review the size, layout and phasing of the investment project, the economic justification for production of various categories of rolling stock and parts and prepare cost estimates for the civil works, including designs of buildings and layout plans for machinery and equipment required to undertake restoration, overhaul and fabrication functions. In the second phase of the project, detailed engineering designs, civil works specifications, equipment lists and contract documents will be prepared on the basis of the conclusions reached during the initial phase.

132. The UNDP contribution to the first phase, which is expected to cover a period of 15 months, has been estimated at $1.2 million, and the Government share at Dongs 256,000. The project is planned for approval early in 1980. The findings of the pre-investment study will guide the Government's decision concerning the second phase.

Development of Civil Aviation - Services and Facilities (VIE/78/002)

133. The role of air transport has become increasingly important as a means of establishing and maintaining the domestic and international transportation links which are considered essential for the country's development. Serious deficiencies presently exist in the civil aviation infrastructure; in particular, many of the electronic and airport lighting facilities are inadequate, out of service or obsolete. This is especially the case with Hanoi/Noi Bai airport which must be developed as the international airport to serve the capital. This airport has only recently been designated for this purpose after the facilities and potential of the original airport at Gia Lam had proven to be inadequate.

134. Development of the new international airport at Noi Bai has been given priority in the national plan and when completed it should have the capability of handling all types of propeller and jet aircraft presently used in international commercial air transportation operations.

135. The airport commenced operations on a limited visual daytime basis in early 1978 and the Government is most anxious to provide for day and night instrument flight operations as soon as possible. For this purpose, UNDP has been requested to provide the necessary equipment as well as technical advice on its installation and use. This will include aerodrome control and approach control facilities, an instrument landing system, high-intensity approach and runway lighting, taxiway and apron lighting and a VOR/DME system.

136. The project will also cover equipment for Danang Airport (VOR/DME system) and

night landing facilities and miscellaneous equipment and spare parts for Ho Chi Minh City, Danang, Qui Nion and Hanoi airports.

137. Specialists' services are to be included in the project to provide in-service training.

138. The approximate total cost of the UNDP participation in this project is estimated at $2.7 million, and the Government contribution at Dongs 1.3 million. The duration of the project will be two years. The project was approved in August 1978.

VII. SIGNIFICANT FEATURES OF THE COUNTRY PROGRAMME

139. One of the most significant features of the first country programme in Viet Nam is its emphasis on the transfer of technology in the form of advanced technical and scientific equipment and highly specialized advisers and consultants. This is in keeping with one of the main objectives of the development plan, namely to undertake a scientific and technological revolution aimed at catching up with the delay in these fields caused by the country's isolation from many scientific and technological developments during 30 years of warfare. The main beneficiaries of this transfer of technology are newly established research and development institutions, natural resources survey programmes and feasibility studies.

140. Another noteworthy characteristic of the programme is the limited number of projects, all large-scale. The average cost of the individual projects is $3.34 million.

141. The distribution of the UNDP resources in the programme is as follows:

	Per cent
Agriculture, forestry and fisheries	38.5
Building construction	28.5
Water resources development	19.0
Industrial development	4.5
Transport development	9.5

142. The programme places relatively heavy emphasis on equipment, which is justified by the particular circumstances prevailing in Viet Nam. Government departments and institutions, no matter at what level and in which field, are critically short of equipment and supplies, which severely hampers their development. This is all the more unsatisfactory as competent and well trained staff is generally available.

143. The personnel component is made up mainly of short-term specialized consultancy missions whose terms of reference are, whenever required, closely related to the installation, operation and maintenance of UNDP-financed equipment. This composition of the personnel component is a reflection of the manpower situation in Viet Nam. Well trained technical staff is available in most sectors. In general, however, such staff need to gain insight and experience in recent developments in science and technology. Hence the emphasis on a relatively few senior technical experts, who are usually resident project co-ordinators, supplemented by specialized consultants assigned to Viet Nam on a short-term basis for clearly defined tasks.

144. An important part of the training component is devoted to study tours for Vietnamese officials. The main purpose of these study tours is to expose Vietnamese

technical and scientific staff to on-going work outside Viet Nam in the fields relevant to the UNDP-financed projects by means of well-programmed visits to research and development institutions, factories, building sites, etc. The same principles have guided the award of individual fellowships. In a number of cases, the study tours are sponsored by the main suppliers of equipment.

145. The approach chosen for this Country Programme aims at achieving maximum impact in a minimum amount of time in the chosen fields. In this, it responds to the particular needs of the country in a period of material reconstruction and remilitarization.

Annex I

Financial Summary

The $49.08 million of IPF resources available for the 1977-1981 period have been programmed[a/] as follows:

Annual Financial Distribution of Programme by Sector
($US thousands)

Sector	1977	1978	1979	1980	1981	Total
Agriculture, Forestry and Fisheries	264	3 030	5 860	6 313	3 430	18 897
Natural (water) resources	18	3 293	4 594	1 129	219	9 253
Housing, building construction	57	4 042	7 018	1 513	1 372	14 002
Transportation	-	2 218	413	1 256	-	3 887
Industry	-	325	124	1 573	616	2 638
Programming missions	15	3	25	-	-	43
Reserve	-	-	-	-	360	360
GRAND TOTAL	354	12 911	18 034	11 784	5 997	49 080

a/ In view of the nature of the programme and the annual distribution it was decided that no provision for "adequate programming" is necessary.

Annex II

ASSISTANCE FROM ORGANIZATIONS OF THE UNITED NATIONS SYSTEM OTHER THAN UNDP

A. Agriculture, Fisheries and Forestry

FAO	US dollars
Establishment of seed-treatment plant, three seed inspection units, advice on seed production, 1 year	170,000
Assistance in vaccine production against foot and mouth disease, 1 year	71,000
Provision of seeds for forest plantations for reforestation, 1 year	7,000
Provision of insecticides, hand and motor sprayers to combat the rice leaf blast in the northern provinces	230,000
Provision of sorghum seeds following the floods in the Mekong delta, 1 year	50,000
Equipment of a pilot centre for the drying and treatment of seeds, advice on the preparation of a national equipment plan for drying, treatment and storage of seeds, 1 year	250,000
Rehabilitation of fish farms (Hanoi)	98,000
Rehabilitation of rice processing centres	200,000
Provision of bean seeds	154,000
Pilot rural school laboratory	10,000
University of Fisheries library	10,000
Dredging feasibility study	7,000
WFP (development projects excluding emergency assistance)	
Rehabilitation of rubber plantations through resettlement, 1 year	13,824,950
Resettlement and development of new economic area, Anh-Khe province, 1 year	3,713,900
Resettlement and development of new economic area, Tay Ninh province, 1 year	8,362,900
Rehabilitation and expansion of pine stands and creation of permanent employment in the Danang region, 4 years	18,078,800
Protection of agricultural land through dune afforestation in the Quang Nam, Danang and Binh Tri Tien provinces, 2 years (expansion for two more years requested and under study)	8,080,000

Annex II (cont'd.)

	US dollars
UNHCR	
Assistance toward rural settlement of displaced persons through provision of farm machinery	400,000
Assistance to displaced fishermen through provision of fishing nets, marine engines, trucks and construction material	1,415,000
IAEA	
Application of radioisotopes in agriculture in the field of plant mutation, expert services and equipment, 1 year	60,000
B. Natural Resources Development	
WFP (development projects, excluding emergency assistance)	
Construction of irrigation works on the Thach Han River, 2 years	12,111,200
Water development on the To-lich River near Hanoi, 2 years	10,490,000
Construction of irrigation works in the Phu Ninh province, 2 years	16,434,000
C. Human Resources Development	
WHO	
Experts and equipment for the faculties of medicine of Hué, Bac Thai, Thai Binh and Ho Chi Minh City	1,539,000
Supplies for pharmaceutical factories	968,000
Support for two secondary medical schools	453,600
Equipment for a medical education programme	110,000
Support for a central medical library	100,000
Support for Materia Medica Institute	436,000
Medical training fellowships	315,000
Medicines and supplies for medicine production	1,018,116
UNHCR	
Assistance toward rural settlement of displaced persons through construction of and equipment for five rural hospitals	500,000
Provision of supplies for malaria control	257,900
Provision of supplies for the national leprosy programme	350,000

Annex II (cont'd.)

	US dollars
UNFPA	
Service delivery and training support to increase the effectivity of the national family planning programme, 3 years	4,643,407
Establishment of a family planning service delivery system in Song Be and motivate the population to plan their families, 3 years	2,471,251
Establishment of a socio-demographic studies unit in the central statistics office, which will collect and analyse basic data to support the family planning programme, 3 years	183,020
A yearly allocation to provide the funds for whatever consultancy might prove necessary for the implementation of UNFPA supported projects, 3 years	225,000
UNICEF	
Provision of equipment for 41 schools for basic teacher training and refresher courses (primary school, 1st level), covering all provinces with approximately 300,000 teachers, 3 years	2,250,000
Provision of equipment for the training and refresher training of 35,000 attendants in 38 pre-primary teacher training schools as well as 2 regional schools, 2 years	630,000
Provision of twenty units of machinery and educational equipment for training of pupils from 14 to 18 years in woodwork, metal-work, needlework, 2 years	910,000
Provision of equipment for 38 schools for teacher training and refresher training (primary school, 2nd level), covering all provinces with approximately 150,000 teachers, 2 years	580,000
Construction of 3,586 classrooms in all provinces of Viet Nam as an immediate response to war destroyed schools and increased needs on the primary level, 5 years	8,500,000
Provision of two workshops (Ho Chi Minh City and Hanoi) for the production of teaching aids and scientific equipment to be used in primary schools, 4 years	2,300,000
Provision of paper for printing of schoolbooks and metal tubes for school furniture production (170,000 chairs, 85,000 tables), 4 years	5,200,000
Provision of tools to 5 provinces with wooded areas for the production of chairs, tables, shelves and other school furniture, 2 years	80,000

Annex II (cont'd.)

UNICEF - cont'd.	US dollars
Provision of equipment for the production of audiovisual aids (cassettes, videotapes, films, slides) to be used for broadcasting of lessons prepared for pre-primary education, teacher training and general information for young mothers, 3 years	190,000
Provision of cement and iron bars for the construction of wells and latrines in rural areas, 4 years	2,300,000
Provision of cleaning equipment for water pipes and five laboratories in order to improve and control the quality of water in highly populated centres (Hanoi, Haiphong), 3 years	1,200,000
Provision of laboratory equipment for 360 brigades for prevention of epidemics, general sanitation programmes and intervention during communal vaccination campaigns, 4 years	2,350,000
Provision of material in 40 stations for the preparation of anti-epidemic measures and for training of personnel from district brigades, 5 years	2,250,000
Provision of four laboratories (Hanoi, Nha Trang, Buon Me Thuot, Ho Chi Minh City) and teaching aids for refresher courses covering personnel of provincial stations, 3 years	460,000
Provision of equipment, vehicles and insecticides for eight mobile units based in 4 regional centres for hygiene and epidemiology to take immediate action (spraying, revive) in case of epidemics, 4 years	1,150,000
Provision of four cold-storage chambers on the regional level for vaccine conservation	50,000
Provision of three workshops for maintenance of vehicles and repair of scientific equipment, 3 years	150,000
Provision of basic items for 1320 commune health stations for primary health care, 4 years	2,150,000
Construction of 10 district hospitals, equipment for 25 district hospitals and 98 maternity hospitals containing approximately 150 beds per unit with priority to war affected areas, 4 years	4,400,000
Provision of pharmaceutical raw materials for the local production of medicaments, procurement of antibiotics and syringes, 4 years	2,300,000
Provision of gynecological equipment, special dental equipment, misc., 4 years	740,000
UNESCO	
Assistance to the School of Pedagogy of Long An (Netherlands/UNESCO)	400,000

Annex II (cont'd.)

D. Infrastructure Development

IAEA	US dollars
Expert services and equipment in nuclear physics for radio and television	35,000
UNESCO	
Assistance to the radio and television station of Ho Chi Minh City	100,000

E. Child Welfare

UNICEF	
Provision of equipment for 38 provincial and 2 regional schools permitting the training of 200,000 attendants who will work afterwards in day-care centres which presently accommodate 1.2 million children	n.a.
The day-care centre network to be increased by the construction of additional 12 large-size day-care centres in the north and 60 district centres all over the country equipped for approximately 9,000 children, 4 years	3,600,000
Provision of blankets, clothing material, mosquito netting, beds, toys, kitchen material, to improve the existing network, 4 years	3,550,000
Provision of machinery with blow moulding and injection moulding for the production of toys in Hanoi (output 520,000 items per year), 3 years	650,000
Construction of a prefabricated warehouse in Haiphong harbour to store material for the Committee for the Protection of the Mother and Child, 1 year	120,000
Provision of machinery for the production of baby food (mixture of rice, soya, milk, vitamins) for children from 1 to 3 years at Nam Dinh, yearly output of 12,000 tons, 6 years	1,600,000
Provision of equipment for the National Institute of Hygiene (Hanoi) for research on conservation of food products and balanced baby food, 2 years	260,000